

Patent Claims

1. Process for denitrification of exhaust gasses of an internal combustion engine operated primarily in the lean phase including the following process steps:
 - placing in the exhaust gas stream of the internal combustion engine a nitrogen oxide storing and catalytically effective solid which is free of alkali earth metals, alkali metals and rare earth, comprising
 - (a) a porous carrier substance and
 - (b) rhodium, which is provided on the porous carrier substance,
 - storing nitrogen oxide during the lean motor operating phase with an air/fuel ratio $\lambda > 1$,
 - releasing and catalytically converting the nitrogen oxide during the rich motor operating phase with an air/fuel ratio $\lambda > 1$,thereby characterized, that the porous carrier substance is comprised of at least 50 wt.% zirconium oxide, titanium oxide, silicon oxide or a zeolite or a mixture of two or more of these compounds.
2. Process according to Claim 1, thereby characterized, that a second noble metal, for example Pt, Pd, or Ir, or a mixture of noble metals, is provided upon the porous carrier substance.
3. Process according to one of the preceding claims, thereby characterized, that the solid is in the form of a pellet or extrudate, or is provided upon a geometric carrier.

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4. Process according to one of the preceding claims, thereby characterized, that the noble metals are provided as atomic mixture upon the porous carrier substance.
5. Process according to one of the preceding claims, thereby characterized, that the noble metals are respectively individually applied upon the same or different porous carrier substances.
6. Process according to Claim 5, thereby characterized, that the noble metals are respectively individually applied upon the same or different porous carrier substances to form a powder mixture.
7. Process according to Claim 5, thereby characterized, that the respective noble metals applied on identical or different porous carrier substances are provided upon a geometric carrier in layers.
8. Process according to Claim 6, thereby characterized, that the noble metals are respectively applied individually upon the same or different porous carrier substances are provided separately from each other upon different, for example serially arranged, geometric carriers.